

8

Dams

C O N T E N T S

Procedure - Application for Certificate of Approval for a Dam
Checklist - Application for Certificate of Approval for a Dam
Checklist - Engineer's Annual Inspection
Monitoring and Emergency Warning Plan.....
Checklist - Permit Engineer's Technical.....
Application Fee and Annual Registration.....

**SUBJECT: Application for Certificate of Approval for a Dam -
(MR-4, Part IV)**

DATE: May 1, 1994

1. Applicant shall complete and submit to the appropriate DEP regional office one original and four copies (total of 5) of Part IV of MR-4, two copies of plan specifications and drawings, and filing fee in the amount of \$300.00. After technical review is complete, a minimum of one original and four (4) copies (total of 5) of the Monitoring and Emergency Warning Plan shall be submitted
2. Bond is required if associated with an existing surface mining permit or a pending surface mining application.
3. Copy of application shall be given to Permit Review Engineer for review. Upon the completeness of the review, the Engineer shall prepare a facts and findings statement with recommendations. The Permit Review Engineer shall also complete a technical checklist.
4. Permit Supervisor will notify the applicant to begin the Class I Legal Advertisement. Applicant is required to submit proof of publication (certification of publication) from the newspaper to be included in the facts and findings.
5. If a request for a public hearing is received within the comment period, a hearing shall be scheduled. The Permit Supervisor will:
 - Preside over hearings and ensure that all proceedings are electronically recorded;
 - Notify the person(s) making the request of said hearing by certified mail;
 - Advise the Regional DEP Engineer reviewing the application to be present at hearing;
 - Notify applicant of hearing and advise that attendance by representative(s) of applicant is recommended, but not mandatory;
 - Provide a brief explanation of the contents of application; and
 - Prepare a recommendation for approval or denial to be included with facts and findings.
6. Certificate of Approval shall be prepared and signed by appropriate Permit Review staff. The original application with one set of plans, facts and findings, and completed technical checklist shall be forwarded to Assistant Chief of Permitting. Based on Engineer's (Headquarters) recommendation, the Secretary shall approve or deny the permit.

7. Distribution of approved applications will be as follows:

- Applicant: Copy of Application
Original Certificate of Approval
One set of Monitoring and Emergency Warning Plans – Applicant shall be responsible for distribution of one copy of approved plan to Office of Emergency Services (OES), County OES, County Sheriff, MSHA district office and others in distribution list.
- Headquarters: Original Application
Copy of Certificate of Approval
One set of Plan Specifications and Drawings
One set of Monitoring and Emergency Warning Plans
- Regional DEP: Copy of Application
Copy of Certificate of Approval
One set of Plan Specifications and Drawings
One set of Monitoring and Emergency Warning Plans
- DEP Inspector: Copy of Application
Copy of Certificate of Approval
One set of Monitoring and Emergency Warning Plans
- Dam Control: Copy of Application
(headquarters)

DEP Regional Engineer: One set of Monitoring and Emergency Warning Plans

CHECKLIST

APPLICATION FOR CERTIFICATE OF APPROVAL FOR A DAM

SMA/Permit No. _____ Project Name _____
 MSHA ID No. _____ Location _____
 Owner _____ Engineer _____
 Height of Embankment (ft.) _____ Watershed (mi²/acres) _____

Application is for ☐ Modification of Existing Facility ☐ Evaluation of Existing Facility
☐ Removal of Existing Facility ☐ Construction of New Facility
☐ Other (*Specify*) _____

I. GENERAL

GENERAL	Yes	No	N/A	Comments
Has application been completed?				
Has design been completed by RPE experienced in the technical areas of dam design?				
Have location, purpose, scope and life of this project been clearly defined?				
Have design assumptions and supporting calculations been submitted for critical phases of the work?				
Is narrative of the project adequate?				
Have appurtenant works been considered?				
Are design of embankments and appurtenances in accordance with Rules and Standard Engineering Practices?				
HAZARD POTENTIAL				
Has evaluation been made of existing and potential hazards of proposed work to health, safety, and welfare of people and property?				
Has a realistic hazard classification been designated for the site and justified by supporting details?				
Have notification and action procedures been identified for remedial action if emergency involving the dam should occur?				
SUBSURFACE/GEOLOGIC INVESTIGATION	Yes	No	N/A	Comments
Has subsurface investigation been made?				
Have conditions within and under existing structures been investigated?				

SUBSURFACE/GEOLOGIC INVESTIGATION	Yes	No	N/A	Comments
Does number, location, and depth of borings or test pits and trenches appear reasonable with respect to size of project and subsurface conditions?				
Has an adequate sampling program been carried out?				
Is insitu testing program appropriate for proposed structure and site conditions (<i>permeability, etc.</i>)				
Has all data been adequately considered in defining geotechnical conditions?				
Has character of bedrock and abutments been considered?				
Has evidence relating to slides, fault movements or other evidence of adverse geologic conditions or earthquake activity been observed at dam site and reservoir area?				
Are joints, slickensides, fissured material, or other geotechnic discontinuities adversely oriented with respect to foundations for dam and appurtenant works adequately identified and is the design approach reasonable?				
Have past mining operations been defined and evaluated?				
Are limitations on future mining activities delineated?				
LABORATORY INVESTIGATION				
Has a laboratory investigation been made of all pertinent materials?				
Have materials been adequately classified?				
Has sufficient testing been performed to develop representative range and average values for density, water content, shear strength, consolidation and permeability parameters?				
Are test results reasonable and consistent?				
HYDROLOGY				
Have limits of watershed been accurately defined on scaled topographic map?				
Has area of watershed been accurately determined?				
Are there any upstream structures of proposed impoundment?				
Have appropriate physical characteristics of watershed been utilized in the runoff analysis? (<i>soil type, ground cover, slope, and antecedent moisture conditions</i>)				
Have design runoffs been determined by acceptable procedures? (<i>i.e., runoff curve number "RCN"</i>)				
Have emergency spillway and/or freeboard hydrographs (or peak flows) been determined using rainfall frequencies and durations appropriate for hazard classification of the structure?				

HYDROLOGY (continued)	Yes	No	N/A	Comments
For recreation and water supply facilities, have stream flows and precipitation records for the site been analyzed to determine minimum probable inflow rates?				
HYDRAULICS				
Have effects of slurry storage been adequately considered for the lifetime of the structure?				
Have stage-storage-discharge relationships been developed to meet the critical design conditions?				
If structure contains a principal spillway:				
A. Has its discharge capacity been accurately defined?				
B. Is design adequate to insure continual service?				
C. Is design adequate to insure no adverse affect on the impounding structure?				
Are minimum drawdown requirements for impoundment satisfied by either a principal spillway or other reliable means?				
Has emergency spillway location considered the provision of safe discharge without endangering downstream face or abutments of embankment?				
Does generated velocities and resultant protection requirements fall within acceptable limits set for the materials involved?				
Have flow characteristics (<i>turbulence, standing waves, etc.</i>) in the emergency spillway been investigated?				
Has an energy gradient diagram and water surface profile throughout the entire length of emergency spillway been computed?				
Does layout and profile of emergency spillway provide sufficient freeboard against overtopping or breaching during passage of freeboard hydrograph?				
Does passage of freeboard hydrograph provide ample protection against overtopping of the embankment and erosive wave action?				
Where no principal spillway exists and all flow is confined to emergency spillway, have provisions been made for periodic inspection and maintenance of emergency spillway channel?				
Has adequate protection been provided for intake structures?				
Have energy dissipaters been provided for outlets where required?				
Has seepage control been considered along any conduit through the embankment?				
Have adequate precautions and diversion facilities been provided for the construction phase of the project?				

SLOPE STABILITY AND PROTECTION				
Have slope stability analyses been made using acceptable methods?				
Have existing and proposed embankment slopes been analyzed?				
Have natural or cut slopes been analyzed?				
Has adequate consideration been given to the possibility of landslide into impoundment?				
Does analytical approach and parameters used in the earthquake analysis appear reasonable?				
Were minimum factors of safety to slope stability and reasonable variations in strength parameters used?				
Are safe slopes indicated:				
A. Under maximum pool?				
B. Under normal operating conditions?				
C. Under drawdown conditions?				
D. Under earthquake conditions?				
Are minimum factors of safety adequate?				
Has sliding at bases of construction zones been considered?				
Has consideration been given to downstream and upstream slope protection?				
SEEPAGE ANALYSES				
Has consideration been given to:				
A. Underseepage?				
B. Seepage through dam?				
C. Seepage around abutments?				
D. Effects of seepage on reservoir slopes?				
E. Effects of seepage on surrounding groundwater table?				
Have reasonable values of insitu permeability coefficients based on site conditions been used?				
Are ratios of horizontal to vertical permeability reasonable?				
Is safety with respect to underseepage adequate?				
Have reasonable seepage control provisions been provided:				
A. Within embankment?				
B. Below embankment?				
C. Upstream of embankment?				
D. Downstream of embankment				
E. For reservoir slopes or groundwater?				
F. For surrounding groundwater table?				
Have provisions been made to monitor and evaluate effectiveness of seepage control measures?				

SEEPAGE ANALYSES (continued)	Yes	No	N/A	Comments
Have adequate considerations been given to piping potential?				
Has seepage analyses considered all reasonably potential piping, sloughing, and solution activity in embankment, foundation and abutments?				
SETTLEMENT ANALYSES				
Have settlement analyses been made:				
A. Of foundation?				
B. Of embankment?				
C. Of existing structures and appurtenant works?				
Has existing settlement data been used in analyses?				
Have reasonable options been considered for eliminating adverse effects of settlement?				
Have differential settlements been considered?				
Has cracking potential been considered with respect to differential settlement?				
Have analyses considered adverse settlements under all conditions of construction and operation?				
Do existing or future deep mining operations present potential for subsidence?				
FOUNDATION ANALYSES				
Have dam and appurtenant works been examined with respect to bearing capacity of foundations?				
Have foundations been examined with respect to adverse geologic conditions?				
LIQUEFACTION				
Has liquefaction potential been considered?				
Have appropriate parameters been considered in evaluating liquefaction potential?				
Are conclusions concerning liquefaction potential reasonable?				
QUALITY ASSURANCE	Yes	No	N/A	Comments
Has quality assurance criteria been established for inspection and testing during construction?				
Has critical construction operations been identified?				
MONITORING PROGRAM				
Has a performance monitoring program been considered:				
A. For Construction Phase				
B. For Operational Phase				
Have type, location and purpose of instrumentation been identified?				
Have parties responsible for interpretation and reporting of results of monitoring program been identified?				

SPECIFICATIONS				
Have construction plans and specifications been prepared?				
Do construction specifications incorporate all applicable design recommendations?				
Lines of communication of the parties involved with the design and construction of the work?				
Are the construction plans, materials, and work methods or end results reasonable?				
MAINTENANCE AND INSPECTION				
Has an operational inspection and maintenance program been developed?				
Do purposes, procedures, and reporting of results address dam safety considerations?				
ABANDONMENT				
Is a timetable included for elimination of impoundment at the end of life of the facility?				
Is final grading of refuse area adequate and in accordance Coal Refuse Regulations?				
Are plans included for removing or sealing pipes?				
Will refuse be covered by non-toxic and non-combustible materials as required by WV Surface Mining Reclamation Regulations?				
SUBMITTAL	Yes	No	N/A	Comments
<i>Plan Portfolio:</i> Has a plan view showing detailed contour intervals, limits of dam and reservoir, springs, seeps, mine drainage, etc. been provided? <i>Plan should be of sufficient size to show all features on one plan sheet.</i>				
Have cross-sections transversely and longitudinally been made showing subdrain systems, elevations, terraces, spillways, soil profiles, etc. been provided?				
Have construction drawings detailing subdrains, appurtenant structures, etc. been provided?				
Have all supporting computations, design data, and assumptions been provided?				
Have stage-storage curves, stage discharge curves, boring logs, soil test data and stability analysis cross-sections been provided?				
Have spillway cross-sections, profiles, and channel protection details been provided?				
<i>Submittal Procedures for Dams:</i> Have two copies of construction drawings been provided? <i>(2 sets should be 24" x 36" plan sheets)</i>				
Has appropriate filing fee been submitted?				

SUBMITTAL <i>(continued)</i>	Yes	No	N/A	Comments
Has correct number of design report, specifications, and construction drawings been provided? <i>(5 sets)</i>				
Has appropriate surface mine application form and application for a dam been included with appropriate filing fees and bonding requirements?				

Checklist completed by: _____ Date: _____

ENGINEER'S CHECKLIST ANNUAL INSPECTION OF DAMS

COMPANY NAME: _____
SMA/ PERMIT NO: _____ MSHA ID NO: _____
INSPECTION DATE: _____

A.	GENERAL INFORMATION	YES	NO	N/A
1.	<i>Stream Characteristics</i>			
	Buildup of Sediments?			
	Discoloration of Stream?			
2.	<i>Warning Plan</i>			
	Has Plan been updated?			
	Has hazard classification changed?			

B.	CONSTRUCTION	YES	NO	N/A
1.	Is removal of vegetation and organic matter and its disposal as per approved plan?			
2.	Is foundation preparation according to approved plan?			
3.	Is placement and compaction of material as per approved plan?			
4.	Are underdrain systems installed & certified as per approved plan?			
5.	Is placement of pipes and filter drains as per approved plan?			
6.	Have required inspections and reports been conducted by company?			
7.	Have required quarterly/annual construction certifications been completed?			

C.	INSTRUMENTATION	YES	NO	N/A
1.	<i>Piezometers</i>			
	Installed, monitored, and maintained as per approved plan?			
2.	<i>Weirs</i>			
	Installed, monitored, and maintained as per approved plan?			
3.	<i>Survey Monuments</i>			
	Installed and maintained as per approved plan?			

D.	EMBANKMENT INFORMATION	YES	NO	N/A
1.	<i>Upstream/Downstream Slope</i>			
	Any erosions or slides?			
	Any longitudinal cracks?			
	Any transverse cracks?			
	Any visual depressions or bulges?			
	Any visual settlements?			
	Is toe drain flowing?			
	If Yes, are any solid particles in water?			
2.	<i>Crest</i>			
	Any visual settlements?			
	Misalignment?			
	Cracking?			
3.	<i>Abutments</i>			
	Any erosion?			
	Any visual differential movement?			
	Any seepage present?			
	Any slides?			
4.	<i>Emergency Spillway</i>			
	Erosion of sides?			
	Sloughing?			
	Restricted by side falls and debris?			
	Restricted by vegetation?			
	Deterioration of erosion protection or lining?			
5.	<i>Outlet Channel</i>			
	Erosion or backcutting?			
	Sloughing?			
	Obstructions?			
	Inadequately riprapped?			
6.	<i>Decant Systems</i>			
	Properly functioning ? Note any concerns in Comments			

E.	VIOLATIONS	YES	NO	N/A
If Yes, describe violations:				

COMMENTS:

DATE	SIGNATURE OF DAM ENGINEER
DATE	SIGNATURE OF INSPECTOR

Copy to Engineer, OMR Headquarters

EXAMPLE

MONITORING AND EMERGENCY WARNING PLAN

This document has been written as an *example guide and format* for monitoring and warning plans to be submitted to DEP for approval. The example has been written for a “worst case” scenario where the dam is above a community and has a high risk of failure. Obviously, many dams in WV will not fit this example in many respects and we expect the persons involved in designing the plans to design to the specific situation.

The DEP will assist the owners of dams in designing the plans to the specific situation, attend on-site meetings with owners, dam monitors, officers of the Office of Emergency Services, and law enforcement officials. DEP will show those involved in the plan what to look for under various monitoring conditions.

The owner of the dam is responsible for writing the monitoring plan and for coordinating with county emergency officials concerning the evacuation portion of the plan. One (1) original plus nine (9) copies of the plan must be prepared and submitted to the appropriate DEP regional office for review and approval. DEP will distribute approved plans.

Emergency plans usually become out of date quickly due to changes in persons involved, shelving of plans in a forgotten place, or changes made to the dam. To prevent this from happening, DEP will make periodic unannounced inspections of the dam and request that the owners produce the plan and discuss how it works as “dry run”. An annual update of the plan shall be submitted for approval by DEP and may be submitted as part of the annual certification under the Dam Control Regulations. More frequent updating of the plans may be required by DEP based on rapidly changing personnel or site conditions.

SAMPLE**TITLE PAGE****MONITORING AND EMERGENCY WARNING PLAN PROCEDURES**

for the

Name of Dam _____

SMA/Permit No. _____

MSHA ID No. _____

Located at _____
(Town, County, State)

Owned by _____

DEP USE ONLY

Issue Date

Revision Date

DEP Approval Date

NOTE: *Annual update of Monitoring and Emergency Warning Plan must be submitted to DEP for review and approval.*

INTRODUCTION

PURPOSE OF PLAN:

The purpose of this document is to provide for monitoring of the _____ dam under various conditions so that an emergency situation on the dam will be properly noted and reported to agencies and persons affected. This document also provides a plan for the orderly evacuation of downstream residents to a place of safety in the event of a potential dam failure.

TYPE AND LOCATION:

The structure is a _____ dam. The dam is a Class C hazard dam
(*Water supply, Slurry, etc.*)
is located on _____ of _____ miles upstream of
(*Receiving Stream*) (*Major Basin*)
_____ County, West Virginia. The longitude and latitude coordinates at or near the
proposed toe of the dam are: Lat. _____° _____' _____" Lon. _____° _____' _____" The
location of dam is depicted in the attached WV Highways General County Highway Map.

BRIEF OF DAM AND PROBLEMS:

The _____ dam is a _____
structure _____ feet high and impounding a maximum volume of water of _____
acre/feet. The dam has a _____ inch (*CMP, concrete*) principal spillway pipe with the inlet
located near the _____ abutment (*looking downstream*) along the upstream face.
The principal spillway riser has a gate valve for draining the impoundment (*when applicable*). The dam
has an emergency spillway open channel located at the _____ abutment
(*looking downstream*). The dam normally has a freeboard (*normal pool elevation to top of dam*) of
_____ feet. Briefly describe phase of construction in the annual updated plans.

If the dam was evaluated under the National Dam Inspection Program (*NDIP*), list all problem areas found in the summary section of the *NDIP* report. If no *NDIP* report exists, list all known problems below concerning the dam:

1. _____
2. _____

NOTE: *A map (plan view) drawing of the dam, spillways, seepage zones and important facilities should be included after this page.*

HOW TO USE THIS DOCUMENT:

Persons using this plan will find a sequence of actions to be taken depending on rainfall and site conditions. Summary and index indicating where the find specific monitoring, reporting, and evacuation requirements is illustrated on the following page.

SUMMARY AND INDEX

SECTION	PART I - MONITORING PLAN
A	<u>Normal Conditions</u> Dam will be inspected according to prescribed schedule and checked for item specified in this section
B	<u>Adverse Conditions</u> Dam will be inspected by a more frequent schedule as prescribed and checked for items specified in this section.
C	<u>Standby Alert</u> Dam has specific problems which could lead to failure. Constant surveillance is required. Notification of agencies is required as specified in this section. Setting up communications network when necessary. Emergency repairs if possible.
D	<u>Evacuation Conditions</u> Dam may fail at any time. If necessary, evacuation notice is to be given by qualified persons.
SECTION	PART II - EMERGENCY WARNING PLAN
A	<u>Notification</u> Notification is given to Sheriff's Department to issue the evacuation notice. Further notification of agencies, hospitals, media, and utilities.
B	<u>Evacuation</u> <i>See Narrative of Evacuation Procedures</i>
SECTION	PART III - POST EVACUATION PROCEDURE
A	No failure of dam - Cancellation of evacuation notice
B	Failure of dam - Cleanup operations - agencies to be notified
C	Emergency Evacuation Map
D	Inspection Record
E	Signature and Distribution List

PART I - MONITORING PLAN

Section A - Normal Conditions: Dry weather or occasional light rainfall. The plan must state areas to be inspected such as condition of trash racks, spillways, seepage zones, embankment cracking, slumps, bulges, gate or equipment failure (*where applicable*), concrete alignment, mine subsidence, and vandalism.

ACTION

RESPONSIBILITY

1. Inspect weekly/bi-monthly/ monthly

Name, Address, Phone No.

NOTE: Alternates may be listed for this section in case of possible illness or vacation of usual monitor. Alternates should not be in the same household as the person with primary responsibility.

2. If a serious problem is found, proceed immediately to Section B or C as appropriate

SECTION B - Adverse Conditions: Heavy or extended rainfall, flash flood warnings, snow-melt. The plan must state areas to be inspected such as spillways, seepage zones, and spillway discharge levels, reservoir elevation and freeboard, embankment cracking or piping, slumps, sink holes, bulges, gate or equipment failure.

ACTION

RESPONSIBILITY

1. Inspect daily or more often as necessary

Name, Address, Phone No.

2. Open gates as necessary (*if applicable*)

Name, Address, Phone No.

Note: Alternates must be listed wherever possible in this section and in the following section. Alternates should not be in the same household as the person with primary responsibility.

3. If a problem is encountered which could lead to failure, proceed immediately to Section C.

SECTION C - Standby Alert: Condition of dam has deteriorated or water rises to predetermined critical level. The plan must be specific to the dam and list areas to be inspected under these conditions such as trash racks, spillways, spillway discharge levels, reservoir elevation and freeboard, seepage zones, instrumentation, embankment cracking or piping, sinkholes, gate or equipment failure.

ACTION

1. Constant surveillance; decrease reservoir level, if possible.
2. Notify agencies according to checklist and wording below.

RESPONSIBILITY

Name, Address, Phone No.

Note: Alternates must be listed

Name, Address, Phone No.

Note: Alternates must be listed

Standby Alert Notifications: The responsible person shall notify by phone each agency in sequence and deliver the following statement:

“This is _____ *Name* _____ advising you that we are starting constant surveillance of the
 _____ *Name of dam* _____ dam according to the monitoring and emergency warning plan.
 We are notifying you, _____ *Agency Name* _____
 of this condition and will inform you if a decision to issue evacuation notice or cancellation of
 the surveillance has been made.”

Then, answer any questions directed by the agency.

Complete the following checklist when notifications have been made:

CHECK WHEN NOTIFIED

PHONE NO.

_____ Department of Environmental Protection
 _____ WV DEP Regional Office
 _____ Office of Emergency Services
 _____ Sheriff's Department
 _____ Mine Safety & Health Administration

1-800-642-3074

County Warning Point

ACTION

3. Start emergency communications network, if necessary, based upon the continuing deterioration of site conditions.
4. Begin emergency repairs, if possible. Plan should anticipate type of emergencies which may occur based on the deficiencies of the dam and state what materials and equipment may be required for emergency temporary repairs to prevent failure. The availability of the materials and equipment and manpower should be considered in the plan.

RESPONSIBILITY

Name, Address, Phone No.

Name, Address, Phone No.

Note: Alternates must be listed

SECTION D - Evacuation Conditions: According to specific site conditions such as overtopping of dam, cracking, piping, spillway failure, obvious deformation of the dam, etc.

ACTION	RESPONSIBILITY
1. Monitor dam condition, issue evacuation notice, if necessary	DEP - if present; County Authority Name, Address, Phone No.; Owner of Dam Name, Address, Phone No.
2. If evacuation notice is given, proceed immediately to Part II below.	

PART II - EMERGENCY WARNING PLAN

Section A - Notification:

ACTION	RESPONSIBILITY
1. Notify agencies according to checklist and wording below	Name, Address, Phone No.

Evacuation Notification: The responsible person shall notify by phone or contact the Sheriff's Department and deliver the following statement:

"This is _____ *Name* _____ notifying you that an evacuation notice for the _____ *Name of Dam* _____ dam has been given by _____ at _____ *(time)* _____

Please notify and evacuate people downstream according to the County Emergency Operations Plan."

Complete the following checklist when notifications have been made:

CHECK WHEN NOTIFIED	PHONE NO.
_____ Sheriff's Department or other responsible agency	
_____ County Office of Emergency Services	
_____ Department of Environment Protection	
_____ Mine Safety & Health Administration	

SECTION B - Evacuation: Evacuation procedures may include any number of site specific measures such as evacuation of houses within so many vertical feet of a stream, or everyone downstream to a certain point. These details must be worked out in advance with cooperation between the Sheriff's Department and the Office of Emergency Services (OES). A narrative of these procedures should appear in this section in accordance with the county emergency operations plan. Evacuation areas and location of evacuation receiving centers must be shown on a county highway or topographic map attached to this plan.

ACTION	RESPONSIBILITY
1. Establish command post, direct emergency operations, organize effort, direct officials of cooperating agencies, coordinate efforts	County OES Director; County Sheriff <i>or</i> Ranking Deputy; State Police <i>or</i> Ranking Officer
2. Transportation of evacuees, with priority to the infirm or disabled.	Local Transit Authority <i>or</i> School Bus Authority
3. Police security of area to prevent looting.	Ranking local Law Enforcement Officer
4. Location of roadblocks to prevent unauthorized entry.	Planned by County OES Director and executed by local officer
5. Location of evacuation centers <i>not below dam</i>	Planned by County OES Director and executed by local officer.
6. Agencies in charge of evacuation centers, including flood, handle inquiries on status of evacuees.	Planned by County OES Director and executed by local officer.
7. Notification of Utilities: ____ Telephone ____ Electric ____ Gas ____ Water ____ Sewage ____ Department of Highways ____ Railroad <i>if applicable</i>	Name, Address, Phone No.

PART III - POST EVACUATION ACTION

SECTION A - Should no failure occur and the hazard passes, cancel evacuation notice - DEP authorized agent is responsible to declare hazard secured.

SECTION B - Should failure occur:

ACTION		RESPONSIBILITY
1.	Notify agencies according to checklist below:	Name, Address, Phone No.
	_____	PHONE NO.
	_____ Office of Emergency Services	
	_____ DEP	1-800-642-3074
	_____ Mine Safety & Health	
	_____ Administration	
ACTION		RESPONSIBILITY
2.	Evacuation or assistance to persons stranded in homes due to highway/bridge washout	County OES Director
3.	Search and Rescue	County OES Director
4.	Cleanup crews and equipment	County OES Director and other listed persons.
5.	Long-term lodging and food relief.	County OES Director and other disaster relief organizations.

SECTION C - Emergency Evacuation Map:

Emergency Evacuation Map must be based on effect of potential dam break on the residences and other structures falling in the path of the flood wave.

Emergency Evacuation Map indicating primary and secondary evacuation areas, location of dam, roadblocks, evacuation center, homes, access roads, bridges, must be included as an attachment.

Acceptable maps shall include:

- U.S. Geological Survey Topographic Maps
(available from WV Geological Survey in Morgantown, WV)
- WV Department of Highways General Highway County Maps

SECTION D - Inspection Record

[illegible]

SECTION E - Signature and Distribution List for this Document

Signatures: The undersigned hereby states that they have read and understand this plan and will carry out the tasks assigned to them:

[illegible]

Distribution:

Name and Address of Person or Agency

- | | | |
|-----|--------------------------|-------------------------------------|
| 1. | Permittee | Distribution by DEP Regional Office |
| 2. | DEP Headquarters | |
| 3. | DEP Regional Office | |
| 4. | DEP Regional Inspector | |
| 5. | DEP Regional Engineer | |
| 7. | County OES | Distribution by Permittee |
| 8. | State OES | |
| 9. | County Sheriff | |
| 10. | MSHA District Office | |
| 11. | Others in Signature List | |

PERMIT ENGINEER'S TECHNICAL CHECKLIST**APPLICANT:****SMA/PERMIT NO:****LOCATION:**

	Enclosed	N/A
1. Project description and justification	_____	_____
2. Geotechnical Information		
Soils Boring Report	_____	_____
Reconnaissance and Subsidence Survey	_____	_____
Compaction Density Testing	_____	_____
Liquefaction Report	_____	_____
3. Hydraulics		
Design Storm Storage	_____	_____
Principal Spillway Capacity	_____	_____
Principal Spillway Drawdown Criteria	_____	_____
Emergency Spillway Capacity	_____	_____
4. Stability Analysis	_____	_____
5. Abandonment Plan	_____	_____
6. Technical Specifications Completeness	_____	_____
7. Engineering Drawing Certification	_____	_____
8. Emergency and Monitoring Response Plan	_____	_____
9. Underground Mining Effects on Dam Stability	_____	_____

COMMENTS: _____

<i>SUBJECT:</i>	Application Fee and Annual Registration for Coal Related Dams
<i>DATE:</i>	April 17, 2001
<i>Approval:</i>	John C. Ailes, Chief, OMR

The applicant for a certificate of approval for placement, construction, enlargement, alteration, repair or removal of a coal related dam must pay a fee of \$300.00 for review of the application.

Each company holding a Certificate of Approval for a Dam (coal related) must pay an annual registration fee of \$100.00. This annual fee will be submitted with the annual update of the Emergency Warning Plan. For dams not requiring an annual Emergency Warning Plan, the annual registration fee will be required at the yearly anniversary date of the Certificate of Approval.

The fees shall be payable to the Department of Environmental Protection in the form of a cashier's check, certified check or bank money order. The regional office will deposit the fees. For tracking purposes, please indicate on the deposit slip in the Fee Type Box "Dam Fee".